

TROPICAL RAINFALL MEASURING MISSION

April 12, 1999 - April 18, 1999

DOY 102 - 108

Day of Mission 501 - 507

TRMM MISSION OPERATIONS

- TRMM is flying in the +X Forward direction as of 99-106, at 15:18:16z.
- The next Yaw maneuver is scheduled for May 15 (99-135).
- Delta-V maneuver #93 is scheduled for April 19 (99-109) using the LBS thrusters.
- The Beta angle range for DOY 109 to 115 is +9.9° to +40.4°.

TRMM SUBSYSTEM OPERATIONS

Attitude Control System

Delta-V maneuver #92 was successfully conducted on 99-104 at 15:48:25z and 16:34:13z, for durations of 38 and 25 seconds respectively, using the ISP thrusters. The off-modulation of the -Pitch thruster (#6) was 36.8% and 31.4% respectively (63.2% and 68.6% on time). The remaining fuel is 739.635 kg and the final apogee and perigee height is 354.80 km x 347.56 km.

A Yaw maneuver from -X to +X was performed on 99-106 at 15:18:16z

The ESA experienced Moon interference in quadrants 1 and 3 during 99-102 through 104 and in quadrants 2 and 4 on 99-108. The ACS performed nominally during the transition between 3 and 4 head control.

FDCs #81 - 84 (ESA Quadrant Blocked by Sun or Moon), which use values from the newly loaded ACS System table #53, were re-enabled and reset on 99-102 at 14:40z.

Flight Data System (FDS)/Command & Data Handling (C&DH)

The frequency standard continues to drift in the negative direction. The frequency standard remains at x759, with a current drift rate of -2.44 μ s/hr. The UTCF was adjusted by -856.5 μ s on 99-102 at 22:52:43z and is now 31535996.866892 sec with a current drift value of -331 μ s.

A Q-Channel Restart occurred on 99-103 at 08:01:06z.

An EDAC Multi-Bit error occurred on 99-105 at 23:26:07z.

Reaction Control Subsystem (RCS)

The RCS subsystem performed nominally during this period. See the ACS section for specific Delta-V information.

Power Subsystem

The Power subsystem operated nominally during this period. Due to longer eclipse durations, both SOC counters have been operating below 100% since 99-103. There are no plans to change any settings at this time.

Electrical Subsystem

The Electrical subsystem operated nominally during this period.

Thermal Subsystem

The Thermal subsystem operated nominally during this period.

Deployables Subsystem

The Deployables subsystem performed nominally during this period.

RF/Communications Subsystem

The RF/Communications subsystem has performed nominally during this period.

SPACECRAFT INSTRUMENTS

CERES

CERES personnel are developing a plan for operating the instrument with the +15 V DAA anomaly. The FOT proposal which describes the new method for leaving CERES powered on for SunAcq/Safehold events has been approved. Testing will be performed in upcoming weeks.

The next instrument power on and science collection period is planned for the end of May.

LIS

LIS performed nominally during this time period.

A command request from MSFC to reset the instrument and configure it back to nominal was performed on 99-106 at 14:01z

PR

PR performed nominally during this time period. The list of Internal Calibration times for the week is listed below.

1999:102:09:02:47-09:07:52z
1999:102:15:33:26-15:35:39z
1999:102:17:08:23-17:09:39z

1999:103:15:55:54-15:58:02z
1999:104:08:14:01-08:16:47z
1999:104:14:44:13-14:46:27z
1999:105:07:05:26-07:06:37z
1999:105:15:07:08-15:09:14z
1999:106:13:55:50-13:58:01z
1999:107:06:14:56-06:18:19z
1999:107:12:44:20-12:45:42z
1999:107:14:18:23-14:20:30z
1999:108:13:06:44-13:08:56z

TMI

TMI performed nominally during this time period.

VIRS

VIRS performed a self-reset (Anomaly #56) on 99-104 between 22:45:35-22:45:56z. The instrument was reconfigured back to nominal mode at 105-00:40:05z.

The Cold Stage reached a maximum temperature of 112.0° K near beta 0°.

VIRS solar calibrations (120 seconds each) were performed on 99-104 at 06:50:00z and 09:52:56z.

On 99-107 at 06:30z, the Operational heater were toggled from the 15W to the 8.5W.

GROUND SYSTEM

Y2K testing has been completed on string 3. During the week of 99-109, operational testing will be performed by the FOT. String 3 is planned to be returned to normal operations by 99-116. A second 9GB hard drive will be added to the GTAS workstation in the upcoming week.

On 99-102 at 12:30z, TR1XT1 crashed during a Real-time event causing state manager to hang on string one (Event #100). A failover to string two was required to finish the support. All recorded data was recovered.

On 99-102, the MOC saw numerous sequence errors on both I and Q channels for the 17:12z and 18:50z TDW events (Event #101 and TTR #20752). During the second event, CSC reported a chain failover which fixed the problem. All recorded data was recovered.

Due to usage by other missions, TDRS time on 99-104 after 18:00z was very limited. As a result, the FOT had to declare the 19:35z event a critical support in order to avoid a recorder overflow and data loss.

Event Reports

#100 - TR1XT1 Crashed During RT Event
#101 - Poor Data Quality During TDW Events

Generic Late Acquisition Reports (for TTRs 19639)

No new Late Acquisition Reports were opened during this week.

New Anomaly

No new Anomaly Reports were opened during this week.

Recurring Open Anomalies

#56 - VIRS Instrument Reset

Prepared by:
Joseph Kowalski
TRMM Systems Engineer

Approved by:
Jeff Volosin
FOT Manager